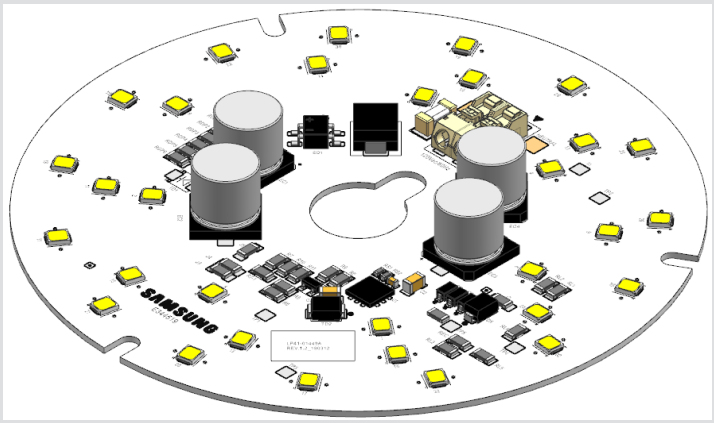
AC Operating Module

US Standard T-24 ACOM



Samsung AC Operating Module is reasonable solution with better uniformity and high reliability

Features & Benefits

- No dark area and smooth light output
- Easy installation by integrated module
- Simple design for Down-light

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Applications

Indoor Lighting

- Down-light
- Wall Light

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1. Product Code Information

a) US Standard T-24 ACOM

Nominal CCT(K)	Product Code
2700	SI-N9W1624B1US
3000	SI-N9V1624B1US
3500	SI-N9U1624B1US
4000	SI-N9T1624B1US

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2. Characteristics (V_{IN} = 120V_{ac} , t_p = 25℃)

a) Basic Information

Item	Unit	Rating	Remark
Rated Lifetime	Hour	>50,000	L70B50
Ingress Protection (IP)	-	no rating	
Operating Temperature	ºC	-20 ~ +40	
Storage Temperature	ºC	-30 ~ +80	
Inrush Current	A	Typ. 2.5	1.35ms
Transient Protection	V	2,500	Energy star
ESD	V	4,000 (Contact)	IEC61000-4-2
	V	8,000 (Air)	

Notes

※ t_p: temperature at which performance is specified measured at “Tc point”.

※ Transient Protection : 7 strikes of a 100kHz ring wave for both common mode and differential mode in accordance with ANSI/IEEE C62.41.2-2002 Category A operation.

b) Electro-Optical Characteristics

Item	CCT	Unit	Rating			Remark
			min	typ	max	
Luminous Flux	2700	lm	1370	1530	-	@120Vac/60Hz, tp 25℃
	3000		1380	1540	-	
	3500		1440	1600	-	
	4000		1450	1620	-	
Luminous Efficacy	2700	lm/W	85	94	-	
	3000		85	95	-	
	3500		89	99	-	
	4000		90	100	-	
Operating Voltage (V_{IN})	-	V_{ac}	108	120	132	
Frequency	-	Hz	-	60	-	
Power Consumption	-	W	14.6	16.2	17.8	
Power Factor	-	-	0.9	-	-	
Color Rendering Index (Ra)	-	-	90	-	-	
R9	-	-	50	-	-	
THD	-	%	-	11	20	

Notes

※ Samsung maintains a measurement tolerance of Luminous flux ±7%, Ra ±3.0, Voltage ±5%.

※ Optical characteristic is measured under following condition.

1) Measuring time : Within in 10 seconds after turn on

2) Integrating time setting : 40ms.

c) Color Coordinate

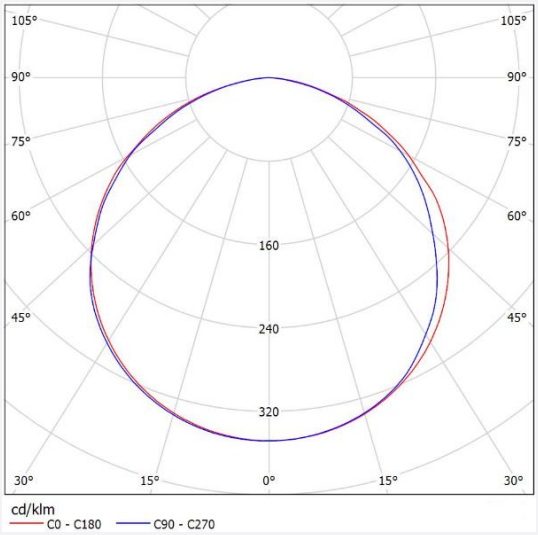
Model	Nom. CCT (K)	CIE 1931 Chromaticity Coordinates				
US Standard T-24 ACOM	2700	CIE x	0.4529	0.4645	0.4732	0.4614
		CIE y	0.4027	0.4053	0.4209	0.4183
		Center	CIE x	0.4630	CIE y	0.4118
	3000	CIE x	0.4295	0.4413	0.4488	0.4364
		CIE y	0.3953	0.3993	0.4148	0.4106
		Center	CIE x	0.4390	CIE y	0.4050
	3500	CIE x	0.4035	0.4164	0.4222	0.4089
		CIE y	0.3819	0.3879	0.4031	0.3967
		Center	CIE x	0.4127	CIE y	0.3924
	4000	CIE x	0.3813	0.3930	0.3972	0.3848
		CIE y	0.3742	0.3815	0.3962	0.3884
		Center	CIE x	0.3891	CIE y	0.3851

Notes

※ Samsung maintains a measurement tolerance of CIE_x / CIE_y ± 0.005

d) Light Distribution

Item	Unit	Nominal	Tolerance	Remark
Beam Angle (FWHM)	˚(degree)	115	± 5	



e) Temperature Characteristics

Item	Unit	Nominal*(t_p)	Life**(t_L)	Max***(t_c)
Temperature Case (Tc)	℃	25	90	100

Notes:

* Temperature used to specify performance of the module (t_p).

** Rated maximum performance temperature at which lifetime is specified in L70B50 (t_L).

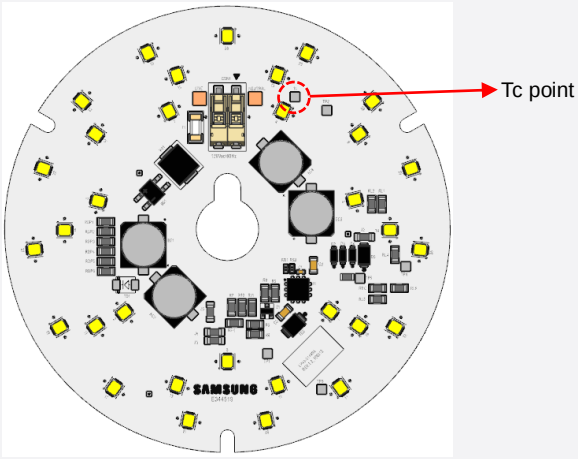
*** Rated maximum temperature, highest permissible temperature to avoid safety risk (t_c).

All temperatures are measured at the designated “Tc point” as indicated on the module.

Please use heat-sink(or heat dissipation solution) with proper thermal capacity(operating wattage).

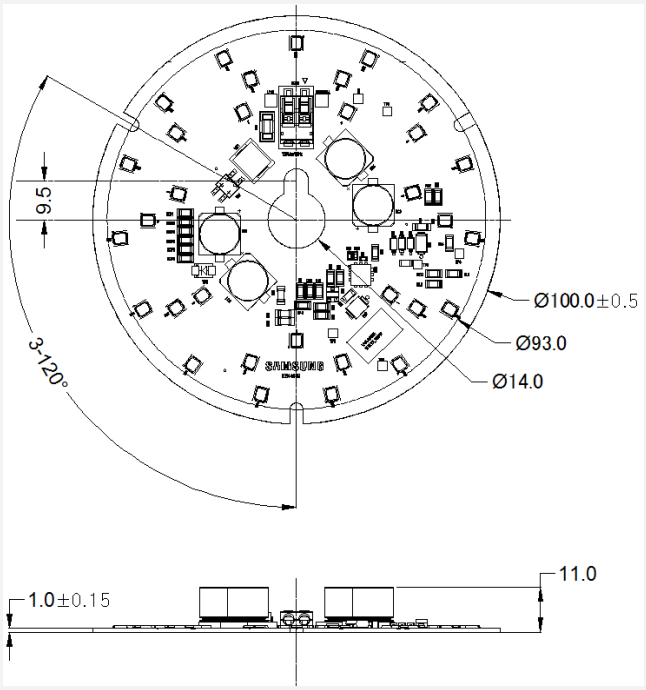
f) Thermal Measurement

Performance temperatures are measured on “Tc point” as indicated on the module.



3. Appearance and Structure

a) Appearance and Dimension



Item	Unit	Dimension	Tolerance
Module Diameter	mm	100	±0.5
Module Height	mm	Ref. 11.0	-
PCB Thickness	mm	1.0	±0.15
Module Weight	g	28	±1.4

b) Structure

Item	Specification
LED	2835
PCB	MCPCB, White PSR, Cu 1oz Single layer
Connector	2-pin
IC	Samsung Electronics IC

4. Certification and Declaration

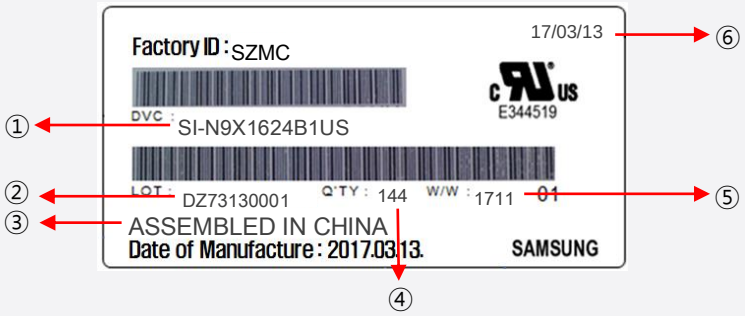
Item	Compliant to	Remark
Test & Certification	UL / cUL	E344519
Declaration	RoHS	Hazardous Substance & Material
	REACH	Hazardous Substance & Material

5. Label Structure

a) Module Label

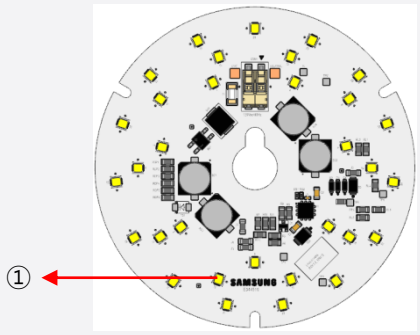
Number	Item	Remark
①	2D Barcode (QR)	-
②	Product code	

b) Box Label



Number	Item	Remark
①	Model Number (Product Code)	SI-N9X1624B1US
②	Lot No.	DZ73130001
③	Country of Origin	ASSEMBLED IN CHINA
④	Packing Quantity	144
⑤	Product Date (year & week)	yyww
⑥	Product Date (year/month/date)	yy/mm/dd

c) Certification Label and Logo



Number	Item	Remark
①	Samsung logo	-

6. Packing Structure

a) Quantity

Product	Packing	Quantity (ea)	Weight (kg)	Remark
US Standard T-24 ACOM	Tray	12	8.9	Weight (includes Modules, Trays and a Box)
	Outer Box	144		
	Pallet	4,320	-	

7. Precautions in Handling & Use

1) This LED Module should not be used in any type of fluid such as water, oil, organic solvent, etc. When washing is required, IPA is recommended to use. When using other solvents it should be confirmed beforehand whether the solvents may react with the Module material. The banned Freon solvents should not be used. Do not clean using ultrasonic cleaner.

2) The LEDs are sensitive to the static electricity and surge. It is recommended to use a wrist band or anti-electrostatic glove when handling the LED Modules. If voltage exceeding the absolute maximum rating is applied to LEDs, it may cause damage or even destruction to LED devices. Damaged LEDs may show some unusual characteristics such as increase in leak current, lowered turn-on voltage, or abnormal lighting of LEDs at low current.

3) VOCs (Volatile Organic Compounds) can be generated from adhesives, flux, hardener or organic additives used in luminaires (fixtures). Transparent LED silicone encapsulant is permeable to those chemicals and they may lead a discoloration of encapsulant when they exposed to heat or light. This phenomenon can cause a significant loss of light emitted (output) from the luminaires (fixtures). In order to prevent these problems, we recommend users to know the physical properties of the materials used in luminaires, and they must be selected carefully.

4) Risk of sulfurization (or tarnishing)
The LED uses a silver-plated lead frame and its surface color may change to black (or dark colored) when it is exposed to sulfur (S), chlorine (Cl) or other halogen compound. Sulfurization of lead frame may cause intensity degradation, change of chromaticity coordinates and, in extreme cases, open circuit. It requires caution. Due to possible sulfurization of lead frame, the LED Modules should not be used and stored together with oxidizing substances made of materials such as rubber, plain paper, lead solder cream, etc.

5) The resin area is very sensitive, please do not handle, press, touch or rub it.

6) Do not drop the Module or give shocks.

7) Do not store the Module in a dusty place or humid location.

8) Do not disassemble the Module.

9) Do not directly look into the lighted LED with naked eyes for a long period of time.

10) Please consider the creepage and clearance distance at the end product.

11) Solder ball

① Solder ball size > Φ0.2mm : Not allowed

② Solder ball size ≤ Φ0.2mm : Allowed up to 3 solder ball

Legal and additional information.

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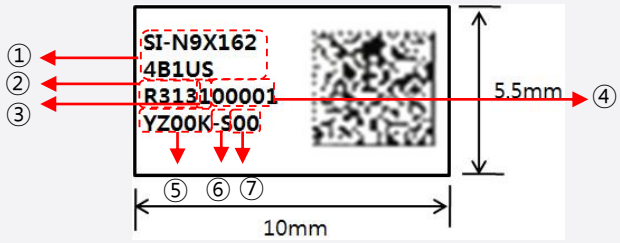
[Appendix]

1. Label Information

a-1) Information of Printed Label

Label Image


No	Item	Remark
1	Product code	SI-N9X1624B1US
2	SMT date	R313
3	SMT line No.	1
4	Serial No.	00001
5	CCT	YZ00K
6	LED Maker	-S
7	Bin Group No.	00

a-2) QR code Information

QR code	No	Item	Remark
SI-N9X1624B1US_R313100001YZ00K-S00	1	Product code	SI-N9X1624B1US
	2	Space	_
	3	SMT date	R313
	4	SMT line No.	1
	5	Serial No	00001
	6	CCT	YZ00K
	7	LED Maker	-S
	8	Bin Group No	00

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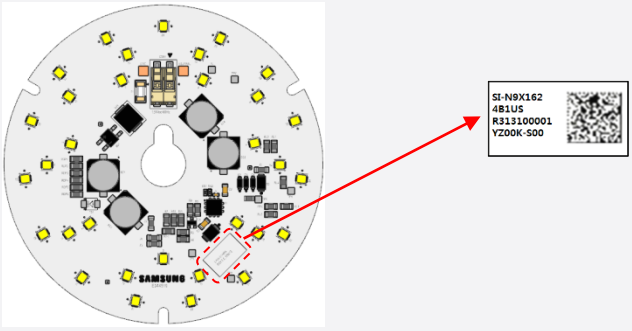
a-3) Label position



2. Applicable Wire Information

a) Applicable wire

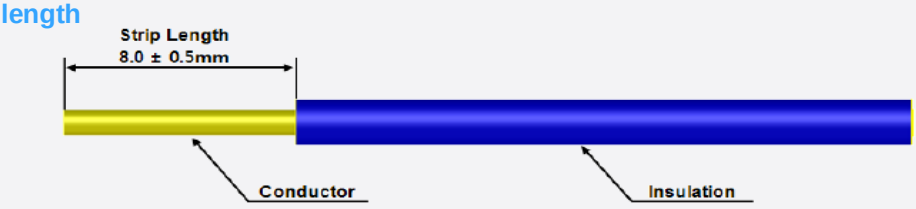
Wire Range AWG No.	Number of Conductors/ Diameter of a conductors (No./mm)	Insulation Diameter (mm)	Conductor Type
24	1 / 0.51 (0.2mm2)	1.35	Solid
22	1 / 0.64 (0.3mm2)	1.48	
20	1 / 0.81 (0.5mm2)	1.65	
18	1 / 1.02 (0.8mm2)	1.86	
22	17 / 0.76 (Reference) After soldering : Φ 0.9mm Max	1.6	Strand
20	21 / 0.95 (Reference) After soldering : Φ 1.1mm Max	1.78	
18	23 / 1.1 (Reference) After soldering : Φ 1.25mm Max	2.1	

Notes

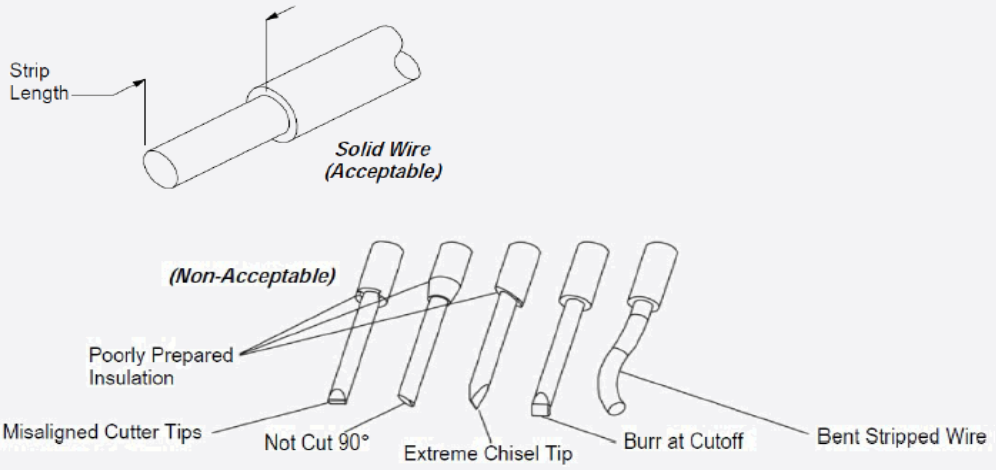
※ Outside insulation diameter Φ2.1mm Max

※ Regarding strand conductor wire, strictly recommend that Pre bond wire type which is dipping into soldering after twisting

b) Wire Strip length



[Conductor : Bear Copper]



3. Compatible Triac Dimmer List

a) Compatibility depends on triac dimmer characteristics.

Even though dimmer is included in the below table, some dimmers may be incompatible according to installation condition.

b) Compatible dimmer list.

No.	Maker	Model	No.	Maker	Model
1	Lutron	DVWCL-153PH	6	Lutron	SCL-153PR
2	Lutron	AYCL-153P	7	Leviton	6674
3	Lutron	S-600PR	8	Leviton	DSL06
4	Lutron	TGCL-153P	9	Leviton	IPL06
5	Lutron	CT-603PGH	10	Pass&Seymour	LSLV603PWV

Notes

※ Do not guarantee the performance of dimmer which is not on the list above.